

**REMARKS/ARGUMENTS**

**Election and Status of the Claims**

Applicants and their attorney hereby confirm the election of Claims 20 and 22-26 (i.e., Group I identified by the Examiner) for further prosecution at this time in the present application. This election is made without traverse, but with reservation of the right to file one or more divisional applications containing the non-elected claims.

Thus, Claims 20 and 22-26 remain pending and under substantive examination in the present application. No claims have been amended by the foregoing amendments

Withdrawn Claims 21 and 27-31 have been cancelled by the foregoing amendments.

Claims 1-19 were previously cancelled.

**Objection to the Specification**

The Examiner has required that the present specification be amended to include reference to the parent application of the present divisional application, including its status. By the foregoing Amendments To The Specification, a new paragraph containing the required information has been added to the present specification, immediately after the title. It is believed that this amendment adequately addresses the deficiency identified by the Examiner and, therefore, withdrawal of this objection is hereby respectfully requested.

**Claim Rejections Under 35 U.S.C. § 102(b)**

Initially, Applicants appreciate the Examiner's identification of allowable subject matter in Claims 22-26 (on page 4 of the Office Action). However, since Applicants maintain believe that the subject matter of independent Claim 20 is novel over Ueda et al, Applicants have elected at this time not to rewrite Claims 22-26 in independent form including all the limitations of the base claim and any intervening claims.

On page 3 of the Office Action, the Examiner rejected Claim 20, under 35 U.S.C. § 102(b) as being anticipated by the disclosure of Ueda et al. (Applied Catalysis

A:General, 2000, pages 135-143) (hereinafter, "Ueda et al."). Applicant respectfully traverses this rejection for the reasons which follow.

The present invention, as recited in dependent Claim 20, is a process for producing an unsaturated carboxylic acid by oxidation of an alkane, or a mixture of an alkane and an alkene in the presence of a catalyst comprising a mixed metal oxide of the particular, specified empirical formula. More particularly, the empirical formula is as follows:



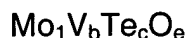
wherein M is an element selected from the group consisting of Te, Sb and Nb,  
wherein X is an element selected from the group consisting of Sc, Y, La, Re, Ir, Cu, Ag, Au, Zn, Ga, Si, Ge, As, Pb, S, Se, Sn, Bi, F, Cl, Br and I, and  
wherein, when  $a = 1$ ,  $b = 0.01$  to  $1.0$ ,  $c = 0.01$  to  $1.0$ ,  $d = 0$  to  $1$  and  $e$  is dependent on the oxidation state of the other elements;  
with the proviso that, when  $d = 0$ , M is selected from the group consisting of Nb and Te, and  
with the further proviso that, when  $d = 0$  and  $M = \text{Te}$ ,  $0.01 \leq b < 0.50$  or  $0.17 < c \leq 1.0$ .

It is noted that the aforesaid catalyst composition enjoys a presumption of validity over Ueda et al. because it is recited in Claim 1 of granted U.S. Patent No. 6,746,983, which lists Ueda et al thereon as prior art officially of record. Thus, it is respectfully submitted that a process which requires use of this catalyst composition, such as the process of the present invention recited in independent Claim 20, would also, necessarily, be novel over Ueda et al.

Furthermore , Ueda et al fails to anticipate the present invention because it fails to disclose all of the features recited in independent Claim 20, most particularly, Ueda et al fails to disclose a catalyst composition covered by the catalyst formuilar recited in Claim 20 of the present application. The Examiner determined that the oxidation of propane is taught by Ueda et al. using a catalyst of formula  $\text{Mo}_6\text{V}_3\text{Te}_1\text{O}_x$ , and that this catalyst corresponds to the catalyst recited in independent Claim 20. However, when they are properly compared with one another, the Ueda et al catalyst identified by the

Examiner, in fact, falls outside the empirical formula recited in independent Claim 20. Since the subscripts of the elemental constituents of the catalyst formula are relative atomic ratios, to properly compare them, the subscripts of the formulas must be converted to the same basis, for example, the embodiment wherein "a" (the subscript for molybdenum) is equal to "1".

The empirical formula of the catalyst recited in independent Claim 20 (and in Claim 1 of US 6,746,983) is already in the form relative to the embodiment where "a" is equal to "1". Application of the second proviso recited in independent Claim 20, i.e., in the embodiment where d=0 and M=Te, results in the following 3-component catalyst formula suitable for use in the process of the present invention recited in Claim 20:

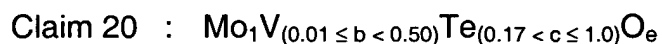


wherein  $0.01 \leq b < 0.50$ , or  $0.17 < c \leq 1.0$ ,

and e is dependent on the oxidation state of the other elements.

The catalyst of Ueda et al, cited, by Examiner has a formula wherein the subscript for molybdenum is equal to "6" (i.e.,  $\text{Mo}_6\text{V}_3\text{Te}_1\text{O}_x$ ). By dividing all subscripts in the Ueda et al catalyst formula by "6", the subscript for molybdenum will be converted to "1" and put the overall formula on the same basis as the catalyst recited and required by Claim 20. With this calculation, the empirical formula of the Ueda et al catalyst is converted to the equivalent of  $\text{Mo}_1\text{V}_{0.5}\text{Te}_{0.17}\text{O}_x$ .

Now, the catalyst compositions are directly comparable:



It is clearly seen that the catalyst formula defined in Claim 20 does not encompass the catalyst disclosed by Ueda et al because it requires that the subscript for V ("b") is less than 0.5, or that 0.17 is less than the subscript for Te ("c"). The catalyst of Ueda et al satisfies neither of these criteria and, therefore, falls outside the empirical formula of the catalyst recited in independent Claim 20. Thus, Ueda et al fails to disclose each and every feature recited in independent Claim 20.

Based upon the foregoing discussion and explanation, it is believed that Ueda et al fails to anticipate the process of the present invention, as recited in independent Claim 20. Thus, it is believed that Claim 20 is presently in condition for allowance. In addition, since Claims 22-26 depend, directly or indirectly, from Claim 20, Claims 22-26 are also believed to be in condition for allowance at this time.

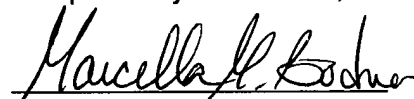
Conclusion

Applicants and their attorney hereby respectfully request re-examination and allowance of Claims 20 and 22-26.

A \$120 fee is believed to be due for a one (1)-month extension of time to submit this Amendment. This fee is addressed by a deposit account charge authorization contained in the accompanying Petition for Extension of Time. No additional fees are believed to be due in connection with the submission of this Amendment. However, if any such fees, including petition and extension fees, are due in connection with the submission of this Amendment, the Examiner is hereby authorized to charge them, as well to credit any overpayments, to **Deposit Account No. 18-1850**.

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